BATTEY'S OPERATION.

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I.—Introductory: Dr. Battey's Cases.

Dr. Edward J. Tilt was the first to call our attention specially to ovaritis, to point out its influence on the general health, and to lay down rules for its treatment. But, notwithstanding the additions he made to our knowledge on this subject, we constantly see cases of ovaritis, so-called, which baffle our best efforts and are hopelessly incurable. In some cases, we find continued ovarian pain and exacerbations of suffering at the menstrual epoch that are almost unbearable. Now and then, this ovarian trouble produces such violent disturbance of the vascular and nervous systems, that life is jeopardised. Occasionally, it terminates in epilepsy or insanity, and ultimately in death.

To my countryman, Dr. Robert Battey of Georgia, we are indebted for what light we now have on the serious consequences of what he terms an unrelieved menstrual molimen. In 1872, he first called our attention to it, pointed out its complications and dangers, and demonstrated a method of relief for it when otherwise incurable.

It is curious and interesting to trace the steps by which important discoveries have at different times been made in medicine. Now and then, the truth is stumbled upon ; again it is reached empirically ; but sometimes we reason it out. As an illustration of the latter process, the discovery of chloral by Liebreich is an excellent example. The investigations of Battey in connection with the question under consideration were pursued according to the inductive method, and his conclusions were arrived at by the careful study of a single case.

In 1865, Dr. Battey had under his professional care an unmarried lady twenty-one years old, who suffered most intensely during the menstrual epoch. She had complete amenorrhœa. She could not menstruate, simply because she had no uterus. Notwithstanding the absence of the uterus, each monthly effort was attended with such agony, with such vascular and nervous excitement, that she was, as it were, worn out with suffering, and she eventually died of mere nervous exhaustion. She died, as Battey thought, from the immediate effects of an unrelieved menstrual molimen.

With the history and termination of this case fresh in his mind, he began to reason thus: "I have never seen or heard of a death like this in a woman after the menopause. It seems that the sufferings and unfortunate termination of this case were due to an unrelieved menstrual molimen. There can be no menstrual molimen without ovulation. There is no ovulation after the menopause. Cannot the menopause be produced artificially? The removal of the ovaries will, of course, arrest ovulation, stop the menstrual molimen, and bring about the menopause. In other words, extirpation of the ovaries will produce artificial change of life, and this will cure the patient."

Such was his reasoning. The more he thought of it, the more logical it appeared to him, and he determined to put his theory to the test of experiment as soon as a suitable case presented itself. Some time after this, he saw another unmarried lady, aged 30, who had been a confirmed invalid for sixteen years, or during her whole menstrual life. She suffered from complete amenorrhœa, having had her menses but twice during all this time. Notwithstanding the non-appearance of the menses, the menstrual molimen was very severe, accompanied by headache, suffused face, and often with epileptiform convulsions that left her in a comatose state. During these paroxysms, she had repeated attacks of pulmonary congestion, followed by protracted cough. Ordinarily, these paroxysms were relieved in a measure by vicarious hæmorrhages, sometimes from the stomach, sometimes from the lungs, most frequently from the rectum, and occasionally from the nose.

She had repeatedly had pelvic cellulitis, terminating in abscess, and, on several occasions, in hæmatocele. Her attacks, recurring at intervals of five, six, and eight weeks, were always violent, and often seemed to threaten life.

Dr. Battey had this patient under observation and treatment for more than six years, and he exhausted the resources of his art without

relieving her in the least degree. Coming to the conclusion at last that there was no hope of curing her, and that she must soon die unless he could arrest the menstrual molimen, he determined to remove the ovaries, with the view of bringing about change of life. His patient readily consented to the operation, fully understanding all its dangers. But he had no precedent for it. He then wrote to many of the leading obstetricians and gynæcologists of the country, stating his views, and asking their opinions on the subject. But he received no encouragement whatever from any of them. His patient was anxious, nay clamorous, for the operation, and he was obliged to perform it on his own responsibility, without a word of approval from any of his brethren. Indeed, the voice of the profession was against the operation then, is opposed to it now, and is likely to be so for many years to come.

In August 1872, Dr. Battey performed the operation of extirpating both ovaries in this case by the abdominal section. The pedicles were tied with silk ligatures cut short and dropped in the peritoneal cavity. Each ovary presented a recently ruptured Graafian vesicle, in one of which the blood had not yet coagulated, looking as if the ovum had just escaped. The progress of the case was slow. Septicæmia supervened, but was successfully combated with intraperitoneal antiseptic injections after the method of Peaslee. Convalescence was tedious, but the cure was complete. All the nervous phenomena, the convulsions and the cough, the pelvic inflammations, the abscesses, the hæmatoceles, etc., disappeared with the cessation of the menstrual molimen ; then she rapidly gained flesh and strength, and she is now in good health.

In this instance, Dr. Battey fortunately proved the truth of his theory, and established a rule that may be followed in similar hopeless cases.

When Dr. Battey published his operation, I wondered that he selected the abdominal instead of the vaginal route for the removal of the ovaries. He has now performed this operation twelve times, twice by the abdominal and ten times by the vaginal section. He gives the following reasons for preferring the latter method.

1. The tissues cut through in the incision are thinner and less important than those of the abdominal wall.

2. With judicious management, air need not, and generally is not, admitted to the cavity of the abdomen, which is inevitable in the abdominal method.

3. A peritonitis set up in the pelvic membrane is much less likely to become general, and is much less grave in its consequences.

4. The drainage of serum from the *cul-de-sac* is prompt and continuous.

5. With care, there is no interference with the mass of the intestines.

6. With properly educated touch, the ovaries are reached with greater facility, and they are brought into view with less strain upon the broad ligaments.

7. These combined advantages render the vaginal method less dangerous to the life of the patient.

As Battey's experience forms the basis of all I have to say on this subject, it will be appropriate to give here a brief synopsis of his cases and results. As his first case has already been detailed, I shall begin with his second, and give the remainder *seriatim*.

CASE II, aged 35, married ; had one child five years old. She had bad health ever since her confinement five years ago. There was persistent neuralgia of the left ovary. The ovary was somewhat enlarged and always painful. The pain was aggravated by touch. All treatment was unavailing. Life was miserable. The left ovary was removed by vaginal incision (1873); the pedicle was tied, the ligature hanging from the vagina ; there was cystic degeneration of the ovary. Recovery from operation was rapid, and there was great relief for a time. But soon the left ovary began to enlarge, and became as painful as was the right before its removal. The result was, that she was not improved. She was to undergo a second operation for the removal of the remaining ovary.

CASE III, aged 38, married ; three children, the youngest nine years old. She had been an invalid ever since her last labour. She had endometritis and continuous ovaralgia. Insanity was threatened. Both ovaries were removed (1874) by vaginal incision. The *écraseur* was used ; no ligature was applied ; no suture. Recovery was rapid. The cure was perfect and permanent.

CASE IV, aged 24, married two years ; sterile ; had been bedridden two years. She had excessive ovaralgia, aggravated by menstruation or exertion. She took morphine in large quantities to relieve the ovarian pains. The left ovary was removed (May 1875) by vaginal incision. The ovary was bound down by adhesions, which were broken down with the finger-nail and removed piecemeal. Recovery was tedious. She was somewhat relieved, but not cured. She still suf-

fered so much that the operation was to be repeated for the removal of the remaining ovary. Result : not improved.

Case v, aged 35, married ; sterile. She had been invalid and bedridden for many years, and had dysmenorrhœa. Ovarian pains were unceasing. The right ovary was very tender on pressure. Coccyodynia was present. The right ovary was removed (May 1875) by the vaginal incision. The pedicle was ligated. Recovery from the operation was rapid. Improvement was slight. The pain recurred in the left ovary, which was removed by a subsequent operation. The result was unsatisfactory ; not improved.

Case vi, aged 30, married ; four children, the youngest six years old. She had been invalid ever since her last confinement. She had ovarian dysmenorrhœa and constant ovarian pains for six years, and was the subject of morphinism. The mind was unbalanced, threatening insanity. Both ovaries were removed (1875) by the vaginal incision ; the pedicles were ligated, and the ligatures brought out by the vagina. All went on well till the ninth day, when she was taken suddenly with pain in the abdomen, and she died of peritonitis in twenty-four hours afterwards. *Post mortem* examination discovered an abscess round the stump of the right ligament (and ligature), which, bursting into the peritoneal cavity, produced the peritonitis.

Case vii, aged 25, single, had severe dysmenorrhœa from her first menstruation at the age of 14. She had had ovarian pains all the time. She had been bedridden for four months. Her nervous system was completely shattered. She took morphia daily in large quantities, also sixty grains of chloral every night. Both ovaries were removed (1875) by the vaginal incision. The pedicles were treated by the *écraseur*. Convalescence was rapid. The cure was complete and permanent.

Case viii, aged 28, married ; one child eleven years old. She had been invalid eleven years, ever since the birth of her child. She had metritis, pelvic cellulitis, and pelvic abscesses. The uterus was irritable, hypertrophied, fixed in the pelvis by effused organised lymph. She had continued ovarian pains. The left ovary was enlarged and very tender on pressure. Both ovaries were removed (1875) by the vaginal incision. A small hæmatocele in Douglas's *cul-de-sac* was opened and cut through. The ovaries were found to be bound down by adhesions, and were removed with great difficulty. The *écraseur* was used. The ovaries were not removed in their entirety. The operation was unsatisfactory. Convalescence was very slow, and was

accompanied with pelvic inflammation and pelvic abscesses. The result was no improvement whatever.

CASE IX, aged 35, married; sterile. This is the same already described as Case V, in which the right ovary was removed by vagina incision three or four months previously, without improvement. The left was now removed by vaginal incision. The previous operation was followed by pelvic inflammation. The ovary was bound down by adhesions that did not exist at the previous operation. It was broken down by the finger and removed piecemeal. The operation was unsatisfactory. She recovered rapidly from it; but the result was no improvement. Dr. Richardson subsequently performed Nott's operation of exsection of the coccyx for the coccyodynia, which was not at all relieved by the removal of the ovaries.

CASE X, aged 29, single. She had been invalid for many years from functional heart-trouble. She had ovarian dysmenorrhœa. Ovarian pains were persistent. Her mind was impaired by long suffering. Both ovaries were removed by the vaginal incision (1876). The *écraseur* was used. Peritonitis followed, and death occurred on the third day. No *post mortem* examination was made.

CASE XI, aged 34, married; one child, still-born, fourteen years ago. The labour was tedious; the forceps was applied. Sloughing followed, then total atresia of the vagina. She never menstruated after delivery, and had been invalid ever since. She had several operations for atresia, all of which failed. Her general health was completely broken down. She had dreadful suffering every month, with unrelieved menstrual molimen and its attendant symptoms. The operation was performed by abdominal incision, because atresia vaginæ prevented the vaginal. Both ovaries were bound down by adhesions, but were liberated and removed entire. The *écraseur* was used. Both ovaries were of normal size; the left showed a Graafian vesicle recently ruptured. Recovery from the effects of the operation was rapid. She was cured completely and permanently.

CASE XII, aged 22, married four years; sterile. She had had bad health for six or eight years; dysmenorrhœa, pelvic and ovarian pains, worse in the left ovary, and epileptic convulsions. Operation was done by vaginal incision (1877). Both ovaries were bound down by adhesions; the right was partially removed, the left wholly. The *écraseur* was used. The operation was unsatisfactory. She was not improved. Dr. Battey thinks of repeating the operation by abdominal section to remove the remaining portion of the right ovary.

Having now given a synopsis of the twelve operations performed by Dr. Battey, I propose to add the seven by myself, and then to analyse the whole, with the hope of deducing more exact rules for our future guidance.

CASE I.—Mrs. C., aged 35, the widow of a physician, came from Choofoo, in China, to place herself under my care in 1874. She had been in bad health for a long time. She had had dysmenorrhœa for many years, and menorrhagia for the last two years. She had retroflexion, with hypertrophy of the posterior wall of the uterus; and the left ovary, about the size of an English walnut, was excessively tender to the touch and the seat of constant pain. She was never free from ovarian pain at any time, and it was greatly aggravated during the menstrual flow. She had worn different sorts and sizes of Hodge's pessary, never with benefit, but always with increase of ovarian pain. She suffered much more with an instrument than she did without one. The uterus could be easily replaced and retained in proper position with Hodge's pessary. But it was impossible to adjust one that would not make pressure on the ovary. Nearly a month was spent in fruitless efforts in this direction. At last, I concluded to confine my efforts to the relief of the dysmenorrhœa and the profuse menstruation.

To ascertain the cause of the profuse flow, I introduced a small sponge-tent. When it was removed next morning, it was found to be distended to its fullest extent everywhere, except where it lay in contact with the os internum. Here, for the third of an inch, it was of the same size as when introduced, showing that, at the os internum, there was a circular band of undilatable gristly tissue that did not yield to the force of the expanding sponge. After this, I incised the cervix, and treated it in my usual way after incision. After the next menstruation, the sponge-tent was again tried. This produced sufficient dilatation of the cervical canal to pass the finger to the cavity of the uterus, when I ascertained that there was no polypus and no fibroid tumour, but merely fungoid granulations (hypertrophied utricular glands) to account for the profuse menstruation. These were removed with the curette, and menstruation was restored to its normal state. This was all that I expected to do for my patient, and I was about to dismiss her to return to China (for she was a missionary), relieved of her painful and profuse menstruation, but without any amelioration of the ovarian neuralgia and uterine displacement. As she really felt no

better than when she left China, she did not wish to return still an invalid. Indeed, the Board of Foreign Missions would not permit her to return unless her health were restored. I then told her she could be positively cured by an operation, which unfortunately would be attended with some risk to life. I explained to her that the diseased ovary could be removed by abdominal section, and that its pedicle could be secured in the lower angle of the incision in such a way as to hold the uterus in its normal position. She willingly assumed all the responsibility of the operation, and begged for its performance at once. With the assistance of Dr. Harry Sims, Dr. Nicoll, and Dr. W. T. Walker, the operation was performed by abdominal section on February 18th, 1875. The ovary, having undergone cystic degeneration, collapsed in the effort to remove it. The pedicle was secured in the lower angle of the abdominal incision, and the remains of the ovary were clipped off. The operation was followed by an attack of pelvic cellulitis, terminating in abscess of the left broad ligament, which opened by the side of the pedicle at the lower edge of the abdominal incision. But, in the course of a month, she recovered entirely from the abscess and other ill-effects of the operation. Fortunately, the abscess did not break up the adhesion between the pedicle and the abdominal parietes. The uterus seemed to be held up in its proper place by the ligament, and, in a few weeks, Mrs. C. returned home perfectly cured.

Dr. Scott of San Francisco saw Mrs. C. on her way from China to New York, and found her condition as I have described it before operation. He also saw her again in San Francisco three months after the operation, on her return to China, and he wrote to me that the uterus was in its normal position, and that the cure was perfect. I have lately heard from Mrs. C. since her arrival in China, and she remains permanently cured. When I did this operation, I supposed I was the first to perform it for the cure of retroversion; but I was mistaken. Dr. Köberle of Strasburg was the first to suggest it and the first to perform it.

Case II.—Miss L., aged 40, enjoyed excellent health all her life till about ten years ago, when she was taken suddenly with dysenteric diarrhœa, which was thought to be of malarious origin. The diarrhœa, which lasted off and on for three months, was regularly intermittent, and was followed by neuralgia in various parts of the body. It left her with an irritable rectum, and she had suffered pain ever since whenever the bowels are moved. She had all the symptoms of fissura ani, or of

ulcer just within the sphincter muscle. She had been repeatedly treated for ulcer, and she had been twice operated on for fissure, and yet her sufferings had never been relieved by any of these operations. Her bowels were moved regularly and spontaneously every morning. Before the movement of the bowels, she was free from pain ; but, the moment they were evacuated, she was seized with violent pain, radiating from the rectum down the lower extremities and up through the abdominal viscera. This enteralgia would continue without abatement all day, and often even till bedtime. Indeed, from the time it seized her, she was never clear of it while awake, for every night she fell asleep conscious of suffering. She usually slept soundly all night from the exhaustion of the daily pain. On waking, she found herself free from pain ; but it invariably returned with the morning movement of the bowels, and ran the same course as the day before, to pass away when she fell asleep again at night. On some days, the pain was worse than on others. It did not seem to be influenced by fasting or eating. Miss L. had consulted distinguished physicians at home and abroad. One said she had an ulcer, and made local applications to cure it ; another, a fissure, and operated ; another, malarial neuralgia, and gave quinine, iron, arsenic, etc.; another, dyspepsia, and treated her accordingly; another, retroversion; and another said there was nothing wrong with the uterus ; another, that it was all nervousness, and gave bromides, antispasmodics, tonics, strychnine, iron, and phosphorus ; another said she had chronic pelvic cellulitis, and treated her eight months for it, but the ever-recurring pain came daily. In 1872, the rectum was again treated by nitrate of silver for ulcer. In December 1872, she sailed for Europe, and went at once to the south of France, where she was treated with local applications for ulcer of the rectum. In February 1873, while etherised, another operation was made on the rectum ; but the pain persisted. She consulted an eminent professor in Switzerland, who said there was no ulcer in the rectum, but that the neuralgic pains depended on misplacement and fibroid of the uterus, and she was sent to Kreuznach, where she underwent a course of treatment for six weeks, but with no relief. She then went to Paris, where an eminent physician said she had no tumour, but merely a displacement, with some inflammation of the uterus. Two other distinguished physicians were called in consultation, who thought that all her sufferings were evidently due to fissure, and she was chloroformed and operated upon for this. The bowels were then constipated for ten days ; but when they were moved, the pain returned with increased

violence. Then, on consultation, they concluded that there was no organic disease to account for the pain, and that it was hysterical neuralgia. After this, she consulted a very distinguished French surgeon, who said he could find no cause for the pain. He recommended fresh air, exercise, and amusement. She then went to Rome for three or four months; returned to Paris in June 1874; spent the summer in England and Scotland; and returned home in September 1874. But wherever she went, or whatever she did, the rectal pain returned daily always under the same circumstances. But it was not always of the same intensity or duration. During her European tour, as at home, she had occasional attacks of diarrhœa, and now and then attacks of neuralgic headache, all coming on without any apparent exciting cause.

On her return home, after nearly ten years of severe and unrelieved suffering, she determined never to consult another physician; but, during a visit to Brooklyn in January 1875, she was in such agony that her friends induced her to send for one of the most eminent physicians of that city, who investigated her case minutely, and told her frankly that he could find no rectal ulcer or fissure and no other organic cause for the pain. In February, she consulted a distinguished New York physician, who thought the pain might be due to retroversion. But, as he was about to leave the city, he had no time to investigate the case. She then returned to her Brooklyn physician, who advised her to see me. I saw her on March 20th, 1875. She was suffering intensely, as already described. Like many others who had seen Miss L. before me, I thought there must be a fissure or an ulcer within the sphincter. The first thing I did was to etherise her, dilate the sphincter, and explore the rectum with a Sims's speculum, looking up to the very beginning of the sigmoid flexure; but, to my great surprise, I found nothing to account for her severe suffering. I then turned my attention to the uterine system. The uterus was retroverted. The fundus was hypertrophied, and its posterior wall, along the cervix and body, was very sensitive to pressure. The left ovary seemed to be a little enlarged, and was tender on pressure. One great trouble in the way of investigation was vaginismus, the gentlest touch producing intense agony. For a whole month, I made strenuous efforts to rectify the malposition, but I failed utterly to fit an instrument that would hold the uterus in its normal position. The narrow, short, virgin vagina appeared to be the chief obstacle. I tried the intrauterine stem, and failed. After these fruitless efforts, I suspended the treatment during the summer, and saw

Miss L. again in the fall. I then etherised her to make a more minute examination of the uterus and its surroundings. I wished to determine whether there were adhesions, and to ascertain more precisely the size and relations of the ovaries. The vaginismal pain had always caused a spasmodic contraction of the abdominal muscles, which had rendered all previous examinations unsatisfactory. But, under the anæsthetic, these muscles were relaxed, and the examination revealed the fact that the uterus could be easily anteverted, that there were no adhesions, and that the left ovary was twice as large as it should be. Having now located the exact position and relations of the ovary when the uterus was elevated into its proper place with the uterine repositor, I desired to repeat this examination when my patient was not anæsthetised, for the purpose of ascertaining the degree of ovarian sensitiveness. I wished to see if, by bimanual pressure, the ovary was possibly the starting-point of the ever-recurring recto-enteralgia. Accordingly, about a week after the investigation under the anæsthetic, I repeated the examination without an anæsthetic. Notwithstanding the vaginismal pain, which was always severe, the uterus was placed in its proper position with the uterine repositor. The left index finger was then passed behind the cervix up to the region of the ovary to the left side of the Douglas' *cul-de-sac*, the repositor, *in situ*, still holding the uterus in its normal position. Then forcible pressure was made with the fingers of the right hand from above, pressing the abdominal parietes down in the direction of the index finger in the vagina. The ovary was then suddenly compressed between the two opposing forces, with the effect of producing instantaneously the peculiar pain that followed the movement of the bowels every morning. The pain from digital pressure radiated from the ovary all over the abdomen, precisely as it did from defæcation. I had for a long time been talking to Miss L. about Battey's operation in her case. This examination satisfied me that her's was a suitable case for the operation ; that it was, in fact, her only hope of being perfectly restored to health. I, therefore, rested from all further temporising efforts, and advised Battey's operation. She did not hesitate a second about it, and made up her mind at once to have it done.

At that time, I had the idea that the proper way to do this operation was by the vagina. But in this instance, as in the one previously detailed, I proposed to do it by the abdominal section, for the purpose of fastening the pedicle in the lower angle of the external incision, and thereby of curing the retroversion.

With the assistance of Dr. Harry Sims, Dr. Nicoll, and also of Dr. Andréi of San Francisco, the operation was performed on October 25th, 1875. In dragging the left ovary through the abdominal incision, it collapsed. It was a conglomeration of thin cysts. After securing the pedicle in the lower angle of the incision, the remaining portion of the ovary was excised. The wound was closed and dressed in the ordinary way. The recovery from the effects of the operation was rapid. The pulse and temperature never rose over 100. The bowels were moved five days after the operation, without the pain that had for ten years invariably followed. The clamp was removed on the sixth day. She kept her bed for nearly three weeks. The bowels were moved regularly during this time without inconvenience. Then she was allowed to sit up and to move round the room a little. She seemed to be perfectly cured. With the performance of the operation, the vaginismus vanished entirely, which was an unexpected result. But soon she began to suffer when the bowels were moved. The old pain began to recur, and to gradually grow worse from day to day. This was certainly a most discouraging thing, after we had all thought the operation a success. On examination, I found a slight return of the vaginismus, and, on passing the finger into the vagina, I found that the adhesion between the ligament and the parietes of the abdomen had given way, or was absorbed, and that the uterus was lying back on the rectum precisely as it did before the operation. The operation, after promising so much, and after really doing so much for a month, proved at last to be a failure. True, her suffering was not as great as before the operation. The pain was somewhat ameliorated. She was improved, but not radically cured, as I expected her to be. If the right ovary had been removed with the left, the result might have been different. During the month that the fundus of the uterus was held up by the ligament attached to the abdominal parietes, she was free from pain; but, when the ligament gave way, the uterus fell back and the pain returned. If this accident had not happened, there is every reason to believe that the cure would have been permanent.

Case III.—Miss W., aged 35, had had dysmenorrhœa nearly all of her menstrual life, and for the last ten years had never been clear of pain in the sacro-pelvic region. She had had the best of medical treatment without the least improvement. Her sufferings had rendered her morbid and morose; and she told her physician, Dr. Jordan, that she would certainly commit suicide if something were not done for her relief. Dr. Jordan then called me to see her. Her dysmenorrhœa was

partly due to stenosis of the cervix, particularly at the os internum, but in a greater degree to the ovary. Indeed, the left ovary was the fixed seat of never-ending pain, which was aggravated during the menstrual flow. It was also exceedingly tender on pressure. I believed the ovary to be the principal seat of disease, the origin of all her suffering. Yet I proposed to Dr. Jordan to incise the cervix, with a faint hope that it might in some degree ameliorate the pain of the menstrual flow. For this purpose, I admitted her to the Woman's Hospital, and the operation was performed in October 1874. But she was in no way improved by it. In November 1875, I extirpated the left ovary by the vaginal section. The operation was followed by an attack of pelvic cellulitis, which terminated by resolution. I made the mistake of removing but one ovary, and she was not only not benefited, but made worse by the operation.

CASE IV.—Miss D., aged 20, had never had a menstrual period without pain ; but her sufferings were not confined to the period. She was never clear of pain in the pelvic region. She had had the best medical advice in the country without any benefit. She was admitted to the Woman's Hospital in October 1873. She had anteflexion, small os tincæ, and contracted cervical canal, with hypertrophy of the anterior wall of the uterus. I promised to cure her by incising the cervix and enlarging the canal, so as to permit a free discharge of the menstrual flow. The operation was done, and she left the hospital not much improved. She returned a year afterwards (October 1874), suffering quite as much as, if not more than, she had ever done. On examination, I found that the cervical canal was nearly as much contracted as it was before the operation a year ago. And I also found, what I had previously overlooked, that the left ovary was the seat of disease, and was probably the source of all her suffering. We now spoke of Battey's operation, but concluded to repeat the operation on the cervix, not with the expectation of making a radical cure, but with the hope of ameliorating in some degree her dreadful suffering. The operation and its effects over, my patient went home ; and returned to New York a year afterwards (1875), suffering as much, if not more, than she had ever done before. Then it was that we began to discuss in earnest the propriety of performing Battey's operation. Miss D. was willing to have it done a year ago ; but now she was anxious for it. The operation was performed in November 1875. The left ovary, being the principal seat of pain, was extirpated by the vaginal incision. It was somewhat enlarged, and had undergone cystic degeneration. The pedicle was severed with the

electro-cautery. This was followed by hæmorrhage, and it was necessary to apply a ligature. The operation produced a severe attack of pelvic peritonitis and pelvic cellulitis, which fortunately terminated by resolution. She was confined to her bed for several months, and barely escaped with her life. She left New York emaciated to a skeleton, and confirmed in the "opium habit". She returned again in October 1876, a most wretched sufferer, but plucky to the last; for she came expressly to have the other ovary extirpated. I did not have the courage to do the operation, though she begged for it. Yet I am sure she can never be restored to health but by Battey's operation by the abdominal section. Here again I made the mistake of removing but one ovary (instead of both), simply because it alone was the seat of the pain.

CASE V.—Mrs. C., aged 38, regular, but had suffered great and constant ovarian pain for more than eight years, which was aggravated during menstruation. The uterus was retroverted. The posterior wall was hypertrophied and tender on pressure. The left ovary was somewhat enlarged, and very painful on pressure. It seemed to be the centre from which radiated all her suffering. She had been under the care of Dr. W. T. Walker for a long time two or three years previously. He operated on the cervix uteri, hoping to relieve the pain of menstruation; and he adjusted a Hodge's pessary for the retroversion. The instrument could be worn with comfort for a little while, but soon the ovary would become prolapsed, and the instrument pressing on it would produce so much pain that it could not be worn. After several weeks of well directed effort by Dr. Walker to relieve her, she went home not improved. Mrs. C. intended to return to New York for a repetition of the incision of the cervix uteri. But her visit was delayed till after Dr. Walker's death. She then came with her physician to see me.

I found the left ovary to be the source of all her suffering. I gave it as my opinion that there was no remedy for her but in Battey's operation. I advised her to submit to the operation, or to return home and stop all medication. The patient, her husband, and her physician went to their hotel, and held a consultation on the subject, and decided to have the operation done. I then advised extirpation of the ovary by the abdominal section, as in Cases I and II, securing the pedicle in the lower angle of the incision, with the view of curing the retroversion at the same time that the diseased ovary was removed. The operation was performed in February 1876. She was stout and fat; the abdominal walls were thick, and the operation was by no means an easy one. Both ovaries had undergone cystic

degeneration, and both burst and discharged their contents during the effort of drawing them up to the surface of the abdomen. Both pedicles were brought out at the lower angle of the wound, and clamped. This was evidently a mistake ; for the ligaments were very short, and the walls of the abdomen very thick ; and thus the traction on the pedicles produced such intense suffering as to necessitate large and repeated doses of morphia hypodermically. She died of peritonitis on the seventh day after the operation.

CASE VI.—Miss H., aged 20, menstruated at 14, the flow soon becoming regular and normal in quantity and quality. At 15, she had a severe fall, and was badly injured in the spine. She was never afterwards clear of pain in the lumbo-sacral region and through the pelvis. But the most remarkable feature of this case was coccygodynia of such intensity as to require large and repeated doses of morphia by the skin. The morphia never entirely controlled the pain, even when given in the largest doses. She groaned and moaned all day and all night. She appeared to be in constant pain, even when asleep. Indeed, it seemed that she had almost lost the power of sleeping ; but, of course, she slept, although she declared she did not. Her mother thought she got short naps of sleep, but certainly never an hour or two continuously.

Her physician, Dr. Mitchell of Mount Sterling, Kentucky, after exhausting all his resources, sent her to Dr. Wright of Cincinnati, who performed Dr. Nott's operation of extirpating the coccyx ; an operation which, based on the history of the case and the symptoms immediately following upon the fall, was certainly justifiable. But no benefit whatever resulted from it ; and, after a few weeks, she returned home, suffering as much as she had before the operation.

A year after this, Dr. Mitchell sent Miss H. to me. It was truly pitiable to see one so young so worn down with physical suffering. The pain at the end of the spine was continuous and most agonising. It never ceased for a moment day or night. It was never modified in the least, except by enormous doses of morphia hypodermically, and often repeated. She could stand, and walk with unsteady gait, but she could not sit at all, because she could bear no weight on the coccygeal region or on the right nates. She lay in bed most of the time in a semi-erect position, always on the left side, the head bent on the chest, the knees flexed and drawn up towards the chin, with lumps of ice applied to the seat of pain. She usually kept her head covered to exclude the light. Photophobia was a marked symptom of the complete

derangement of her whole nervous system. When her head was uncovered, her eyes, so sensitive to light, were kept half-closed, and she was frowning and blinking all the time. She had a strong intellect and a kind heart, but her long suffering had soured her temper and depraved her whole nature. She was at times dictatorial, self-willed, and obstinate. She would often cover up her head and refuse to see anyone, or to speak to her physician (Dr. Harry Sims), even when he spoke in the kindest and most persuasive manner. Her natural gentleness was submerged by her physical suffering. She fretted and whined like a sick infant; or she was dogmatic like a spoiled child.

The idea of examining the seat of pain produced in her great nervous agitation. She shuddered and shrank from even the thought of it.

I found a longitudinal cicatrix, an inch and a half long, over the coccygeal region, marking the seat of the operation performed a year ago by Dr. Wright for the extirpation of the os coccygis. This cicatrix was elevated a little above the level of the adjacent skin. It felt hard and gristly, and was exceedingly tender to the touch. Indeed, the gentlest touch produced intense suffering. Even titillation with a feather was agonising. The sensitiveness was not confined to the cicatrix alone. It extended for an inch or more above, and as much below it. It also extended laterally on the right side of the nates for about two inches, but not at all on the left. The skin on the right of the cicatrix was thicker than natural. Its follicles were hypertrophied. The skin of the whole sensitive region was thicker and coarser than that on the opposite side of the cicatrix; while the skin on the left side of the nates adjoining the cicatrix was natural in appearance, and its sensibility was normal.

The fall, the concussion of the spine, and the coccygodynia following immediately afterwards, all conspired to concentrate my attention on the chief point of suffering, the end of the spinal column. I could see the case only as Dr. Mitchell and Dr. Wright had seen it before me; so I dermined to repeat Dr. Wright's operation, removing the tender cicatrix, a larger piece of the bony structure, and all the thickened supersensitive skin on the right of the original operation.

The operation was performed in November 1876. The wound did not heal entirely for about three months. The operation was not attended with the least improvement; and was, therefore, a perfect failure.

On February 1st, 1877, Miss H. was on the eve of returning home, worse, if possible, than when she came under my care. As I said

before, she had suffered greatly from dysmenorrhœa ever since the fall, and she never ceased to complain of pain in the right ovary, but the excruciating pain of the coccygeal region masked all other symptoms, and naturally monopolised the thoughts and attention of every medical man who had seen her.

After my signal failure to relieve her in the least degree by the operation on the end of the spine, the idea occurred to me that all this exaggerated hyperæsthesia might possibly be merely a reflex symptom. Then it was that I turned my attention seriously to investigate the condition of the pelvic organs. A great obstacle to this investigation was found in the fact that she had a vaginismus of the worst sort.

On a minute examination, I found a well marked retroflexion, with the right ovary very painful. On pressing the ovary suddenly, she shrieked out, saying the pain shot from the ovary down to the seat of hypersensitiveness in the coccygeal region. I repeated this experiment several times, and she always declared that, while the local touch was agonising, the radiated pain was more so. I then came to the conclusion that the malposition of the uterus and the attendant ovaritis were due to the fall, and that the coccygodynia was simply symptomatic of the utero-ovarian trouble.

I then proposed Battey's operation, which this poor sufferer gladly and hopefully accepted. The operation was performed on April 6th, 1877, by the vaginal incision. The right ovary was soon seized, brought down, and crushed off with the *écraseur*. The operation was immediately followed by a severe attack of pelvic peritonitis and pelvic cellulitis. Her pulse went up to 130, and her temperature to 103½ deg. She had a pelvic abscess, which fortunately discharged by the vagina. She had pyæmic poisoning, and pyæmic abscesses in various parts of the body. Her sufferings were so greatly aggravated, that we were obliged to give her immense doses of morphia hypodermically to make life bearable. Altogether, she was made much worse by our well meant but misdirected efforts to relieve her; and she left New York seven weeks after the operation, in the most miserable condition imaginable.

If I had extirpated both ovaries by the abdominal section and secured the pedicle in the incision, as in Case 1, there would have been some chance of radical cure of this case. As it is, she has been made worse by an operation half done.

Case VII.—Mrs. G., aged 38, married at 20, enjoyed good health till the birth of her child fifteen years ago. Since then, she had not

seen a well day. The labour was prolonged and difficult. It was followed by subinvolution and a train of uterine troubles that required constant care. In spite of the best medical aid, she grew gradually worse and worse; and she was eventually obliged to resort to opiates for the temporary relief of her inordinate suffering. In October 1876, her physician, Dr. McSherry of Martinsburg, Virginia, came with her to New York for advice.

She was naturally frail and delicate. She was anæmic and very thin, because she could not take enough nourishment. The daily use of morphia hypodermically, which was absolutely necessary, impaired her appetite and digestion. She had constant pain in the pelvis. She had had a severe form of dysmenorrhœa ever since the birth of her child (fifteen years before); and she was never at any time clear of pain, even when under the influence of morphia. She had retroflexion of the uterus, with great hypertrophy of the posterior wall, which was very tender to the touch. The os was exceedingly small. The cervix was of gristly hardness. The canal was contracted through its whole length to the cavity of the uterus. The os internum was abnormally contracted just at the point of flexure; and the passage of a small probe produced exquisite suffering. The uterus was bound down with adhesions to the rectum, for it could be elevated by the uterine repositor to an angle of only about 45 deg. above the axis of the vagina, and at that point the pain produced in the rectum became so intense that I was obliged to desist. But the worst feature of the case was, that the ovaries were the source of all her sufferings. They were very tender and sensitive to the touch; and slight pressure, especially on the left ovary, produced the most intense agony.

I gave the opinion that the case was incurable, except by Battey's operation. Dr. McSherry thought it would be wiser to operate on the cervix first by incision, for the purpose of relieving the obstructive painful menstruation. If that should fail to give relief, then we might subsequently resort to the more serious operation of Battey. Accordingly, the operation of incising the cervix was performed. The cervix was so much indurated, that the noise made by the knife in the incision could be heard by the assistants. [Where there is such a gristly degeneration of tissue in the cervix, we can never expect any permanent relief from operation.] The induration and the grating sound of the knife at the os internum were as great as at the os externum. She menstruated more freely at the next period than she had done for many years, and the pain was less. But at the next period the canal of the

cervix had contracted down nearly to the size it was before the operation, and the menstruation became again scanty and painful as before. The ovarian pains were not relieved in the least degree. Mrs. G. went home to await the full result of the operation; and, at the end of three months, being no better, she returned to New York with Dr. McSherry's full consent to the performance of Battey's operation. I was at this time fully persuaded that the easiest and safest method of doing this operation was by the vaginal section. Accordingly, the operation was attempted in May 1877. The incision in the vagina was made according to Battey's plan. In my three previous operations by the vagina, the opening into the peritoneal cavity was made easily enough; but in this case it was exceedingly difficult, on account of the adhesions between the rectum and the posterior surface of the retroverted uterus. These adhesions, which were old and dense, were broken up by the finger. Then, by the uterine repositor, the uterus was raised up into its normal position, which was impossible before the adhesions were broken up. Holding the uterus up with the repositor, and pulling its anterior surface forward almost in contact with the inner face of the pubes, I passed my finger into the peritoneal cavity, and attempted to bring down the ovaries. They were firmly bound down by strong bands of false membrane, and it was impossible for me to dislodge them. I made steady and determined efforts to remove them piecemeal, as Battey had done before, but (fortunately) I could not. Then, to my great mortification, I was forced to abandon the operation. Being a firm believer in Lister's antiseptic method, I tried it in this instance; and to this I attribute, in a great measure, my total failure to finish the operation; 1. because the carbolic spray corrugated the parts and rendered them dry and unyielding; and 2. because it deadened the sensibility of my finger, so that I could not distinguish one part from another.

It might well be asked why I did not complete the operation by the abdominal section. I did not, because my patient was very feeble, and quite exhausted by the half-hour's etherisation, and I thought it safer to stop at once, than to submit her to the anæsthetic for another half-hour.

In the three cases on which I had previously operated by the vaginal incision, all had pelvic cellulitis (one of them pelvic peritonitis). In some of Battey's cases by vaginal incision, similar results followed. In this case I feared the same unlucky complication, because of the extensive laceration of false membrane that bound the opposing sur-

faces of the uterus and rectum together. But there was no complication whatever. She recovered from the immediate effects of the operation at once. Her pulse and temperature rose but little above the normal standard, and only for the first twenty-four hours after the operation. Was this due to the antiseptic spray? If this operation had been performed by the abdominal section instead of the vaginal, both ovaries would have been removed entire with the possibility of a complete cure. I knew, before the operation, that the uterus and rectum were bound together by false membrane, because this bond of union had prevented me from replacing the uterus in its normal position. But I was then labouring under the delusion that, even with adhesions to break up, the vaginal route was safer than the abdominal, because it favoured drainage.

Analysis of Cases.

Battey has now performed his operation twelve times; twice by the abdominal, and ten times by the vaginal section. I have done it seven times; thrice by the abdominal, and four times by the vaginal section. In reviewing these nineteen cases, the question naturally arises "Were any of them submitted unnecessarily to operation?" In all of Battey's cases, I think the operation was wholly justifiable. I saw, with him, two of his most moderate cases (IV and V); and in these, all other means had been exhausted without affording the least relief, and he was obliged to operate, or to do nothing. My fifth case (that died of peritonitis on the seventh day), might have been postponed for a while, but it is certain that no other treatment could have relieved her; for both ovaries had undergone cystic degeneration, and an operation would have been necessary sooner or later. In all of my cases, the ovaries removed were in an abnormal or diseased condition; they had all undergone cystic degeneration. Their fibrous structure (stroma) was greatly altered in appearance, and I have no doubt that the microscope would have shown that it had undergone marked organic change, in consequence, probably, of subacute ovaritis, which blends and amalgamates the nerve-filaments, cellular tissue, and fibrous structure of the organ into a sort of neuroma. In no other way can we account for the persistent neuralgic pains; they are the pains of a neuroma, and the poor sufferer almost invariably and necessarily becomes a morphinist.

Ordinary cystic disease of the ovaries, resulting in true ovarian

tumours, never gives rise to severe pain, as the experience of Spencer Wells and our other great ovariotomists clearly proves. The peculiar pain of these cases must then depend upon some radical organic change in the nerves and stroma of the ovaries, and not upon the mere development of cysts. This view of the case is further strengthened by the fact that the pain persists after imperfect removal of the ovaries where the cysts are broken down and scraped off while a portion of fibrous structure still remains.

In some of my cases, the ovaries were of twice their natural size. In three, the ovary burst in the act of pulling it out of the peritoneal cavity. In Battey's cases, the ovaries had undergone cystic degeneration in every instance in which he examined them. Some were three or four times larger than the natural size. In six of Battey's cases, the ovaries were bound down by adhesions; in one of mine, this was the case. Battey lost two cases; I lost one. All died of peritonitis. The peritonitis in one of Battey's cases was secondary, the result of a small abscess (holding about an ounce) around the ligature on the right pedicle, which broke into the peritoneal cavity on the ninth day after operation, and the patient died in twenty-four hours. In five of Battey's cases that recovered, the operation was followed by some form of pelvic inflammation. One of these had septicæmia, and one pelvic abscess; their recovery was slow. In the other five, there were no complications, and the recoveries were rapid. In five out of six of my cases that recovered, the operation was followed by pelvic cellulitis or pelvic peritonitis, two terminating in abscess. In all of these, recovery was tedious. In Battey's cases, the removal of both ovaries in no way affected sexual desire. In six cases, he removed both ovaries entire; in three, he removed but one. In three cases, the ovaries were broken down and removed piecemeal; in all of those where but one ovary was removed, or where they were broken down, the operation was unsatisfactory, and without benefit. Of Battey's twelve cases, two are marked improved; four, not improved; two died; and four were cured perfectly. Only twenty-five per cent. cured is not encouraging to the advocates of this operation. My own results are still worse. Out of seven operations, one died; in one, the operation was not finished; three were made worse by the operation; one was greatly improved; and but one was perfectly and permanently cured. In reading this record, one may well feel surprised that I advocate the operation to-day with more earnestness than I did at first. I do it, because I now see where mistakes were made, and how they may be

avoided in the future. Without operative procedures, these cases are all hopelessly incurable. We must improve our methods or leave them where we found them. I see no reason why the operation should not be made safe and successful. Ovariotomy was once opposed because it was unsuccessful; but now it is accepted because it is successful. Battey is the originator of this operation. He is the pioneer in an unexplored field of observation. It is not, then, to be wondered at if he should have done some things he ought not to have done, and left undone some things he ought to have done. He is the leader; I the follower. Let us look back over our work, and see if it has always been well done. Our failures will be lost to science if they do not lead to improved methods and to better results. Our errors, like beacon lights to warn others against hidden dangers, should be made conspicuous. Let us, then, frankly inquire where and how we have made mistakes, that we may profit by them in the future.

Battey started out with the theory that the cure would depend upon bringing about change of life by the removal of the ovaries. The experience of all ovariotomists proves conclusively that the removal of one ovary will not do this, and yet we find Dr. Battey ignoring his theory at the very outset, and removing but one ovary in the second case on which he operated; and he did the same thing in his fourth and fifth cases. Thus we see him in three out of five operations departing from the rule laid down for his guidance at the start. He lost sight of his theory, and removed but one ovary in each of these three cases, because but one ovary in each was the fixed seat of pain. Nothing could be seemingly more rational, and yet it was most unfortunate; for in all these cases the operation was unsuccessful. In three of my cases, where but one ovary was removed, the operations were utter failures. In all of these, it will be necessary to repeat the operation for the removal of the remaining ovary if they are ever to be cured. In one of Battey's cases, he has already done this; and he expects to do it in the others. It is bad surgery to submit a patient twice to such a hazardous operation as this, to do what ought to have been done at one. My cases prove that in almost every instance the operation is followed by some form of pelvic inflammation; and this, of course, enhances the danger of a second operation. Battey's only successful operations were those in which he removed both ovaries in their entirety, while he failed in every case where he removed but one ovary, or where they were mutilated and removed piecemeal. The inference is clear that, as a rule, both ovaries should be extirpated

whole at one operation. There may be exceptions to this rule ; but in Battey's twelve cases, there was none. My first (and the only case I cured perfectly) was an exception, and I know of one more : Dr. Sabine's case. Notwithstanding these two exceptions, it is wise to follow the rule in all cases. Battey's operations and my own would have presented very different results if we had not departed from the theory he laid down at the beginning, viz., to bring about change of life by extirpating the ovaries.

Battey started out with the idea that the operation would be easier of execution, and less dangerous, by the vaginal route than by the abdominal; and I did the same thing. If we could determine beforehand that there had been no pelvic inflammation, and, consequently, no adhesions between the pelvic viscera, then there would be no objection to the vaginal incision for the removal of the ovaries. Four of Battey's vaginal operations (IV, VIII, IX, and XII) failed, because he found the ovaries bound down by adhesions, so that it was impossible to remove them entire. He was obliged to break them down with his finger, and to scratch them out with his nail, and the operations were always unsatisfactory and unsuccessful. In all of these cases, if he had operated by the abdominal section instead of the vaginal, he would certainly have removed the ovaries entire, and the result in each would have been just the reverse of what it was. For Battey has never yet failed to remove the ovaries entire by the abdominal section, no matter how great the adhesions may have been. I repeat that the success of these operations, as a rule, depends upon removing both ovaries entire and not by piecemeal. In Battey's four cases "cured", both ovaries were removed in their entirety. In all the failures, they were removed piecemeal, or only one was taken out. In all those removed piecemeal, the incision was by the vagina, and the result a failure. If it had been by the abdominal section, they would have been removed entire, and the result would have been a cure. In the four that I operated on by the vagina, I removed but one ovary in three cases, and they were all not only not improved, but made worse by the operation ; and in the fourth case, I failed entirely to reach the ovaries, because they were bound down by adhesions. Now, if I had removed both ovaries instead of one in the first three, they would have stood the chance of being wholly cured ; and if in the fourth case I had operated by the abdominal route, there is every certainty that I would have found the ovaries and removed them although they were bound down by adhesions. Battey evidently went

astray in not following out his original idea as to the necessity of removing both ovaries to effect change of life; and I followed him blindly. Again, he was led astray by theoretical ideas in regard to the facility and safety of the vaginal incision as compared with the abdominal. And here again I followed him blindly, and with results more unfortunate than his. Battey's first and eleventh cases were the most unpromising of his whole series, and yet they were the most successful and the most satisfactory of all. These were his only two by the abdominal section. In each, there had been pelvic inflammation and pelvic cellulitis; and in one, the ovaries were bound down by adhesions, but were removed whole, and the cases were triumphantly cured. If he had attempted the vaginal operation in these two cases, his failure to remove the ovaries entire would have been as signal as it proved to be in all of his other cases by vaginal incision where the ovaries were bound down by adhesions and had to be removed piecemeal, with a failure to cure. Fortunately for Battey's first case, the operation by abdominal incision was performed before the maturation of his ideas on the facility and safety of the vaginal incision, or it could hardly have been successful. Fortunately for the eleventh operation (second by abdominal incision) it could not be performed by the vagina because of the atresia vaginæ, which rendered it a physical impossibility; for if the vagina had been normal, he would (at that time) certainly have operated by the vaginal incision; and as the ovaries were bound down by adhesions, he would certainly have failed to remove them entire, and the result would have been as unsuccessful as it was in all of his other cases of the same sort. I failed completely to remove, by the vaginal incision, ovaries that were bound down by adhesions; and Battey has never succeeded in doing it in a single instance in a satisfactory manner, while by the abdominal incision he has succeeded perfectly in every case, even when the adhesions were extensive and well organised.

The inferences that I draw from this analysis of Battey's and my own operations are these.

1. Remove both ovaries entire in every case.

2. As a rule, operate by the abdominal section, because, if the ovaries are bound down by adhesions, it is possible to remove them entire, whereas by the vaginal incision it is impossible.

3. If we are sure that there has been no pelvic inflammation, no cellulitis, no hæmatocele, no adhesion of the ovaries to the neighbouring parts, then the operation may be made by the vagina, but not otherwise.

Battey's views about the relative advantages of the abdominal and vaginal sections for the removal of the ovaries have been lately undergoing a change; for, in a private communication received from him (October 1877) he says: "Three of my cases (by vaginal incision) have been unsuccessful, because of imperfect removal of the ovaries. In every case where both ovaries have been cleanly removed (and the patient recovered), the change of life has taken place, and the maladies operated for have disappeared. The ovaries are more easily removed by the abdominal method. In three cases, it required greater skill than mine to effect clean removal by the vagina. When we cannot be assured of success by the vaginal route, we should elect the abdominal."

Acting upon this principle, I am sure that Dr. Battey's next series of twelve operations will show a widely different result from that of his first twelve; and I hope, with the light now before me, that my next seven cases will be a great improvement on my last.

The following table shows the number of times this operation has been performed, the number of deaths, and the name of each operator.

	Operations.	Deaths.
Dr. Battey, Georgia	12	2
Professor Hégar, Freiburg	2	0
Dr. Trenholme, Montreal	2	0
Dr. Gilmore, Alabama*	1	0
Dr. Thomas, New York	2	1
Dr. Peaslee	1	1
Dr. Sabine	1	0
Dr. Sims	7	1
	28	5

Battey's operation may be resorted to under the following conditions.

1. In cases of amenorrhœa where there is no uterus, or only the rudiments of one, or where there is an incurable atresia uteri, and the menstrual molimen produces such violent disturbance of the whole system as to destroy health and endanger life, the removal of the ovaries is the only means of permanent relief.

2. In cases of prolonged physical and mental suffering attended with great nervous and vascular excitement produced by perturbed menstrual molimen, whether menstruation be absent, scanty, or otherwise, this operation is justifiable after all the usual remedies fail to relieve.

* Dr. Gilmore's case died of yellow fever nine months after the operation, while convalescing from a peritoneal pyæmic abscess, the result of the operation.

3. In cases of incipient insanity and of epilepsy depending upon ovarian and uterine disease, this operation is justifiable after all other remedies have failed to cure.

4. In cases of fibroid tumours of the uterus attended with incurable hæmorrhages that endanger life, when the tumours cannot be safely enucleated and removed, this operation may be resorted to with the hope of arresting the bleeding and the prospect of diminishing the tumours.

5. In cases of chronic pelvic cellulitis and of recurrent hæmatocele, when the attacks are traceable to the disturbing influences of the menstrual molimen, we may have recourse to this operation as a *dernier ressort*.

Dr. Trenholme of Montreal, and Professor Hégar of Freiburg, have performed Battey's operation in cases in which severe and exhausting hæmorrhage in connection with the menstrual period had resisted all other treatment.

Professor Hégar has performed Battey's operation twice to bring about the menopause, and thus to arrest hæmorrhage from uterine fibroids. In each case, the bleeding ceased entirely and the fibroids appeared to diminish. One of Dr. Trenholme's operations was to arrest hæmorrhage from an uterine fibroid, and, in the end, it proved successful.

Professor Hégar and Dr. Trenholme each had the happy thought of removing the ovaries, as being less dangerous than the extirpation of the uterus with the fibroid. And thus they have enlarged the area of Battey's operation by opening up a field for its use that was hardly contemplated by its author.

The operations of Professor Hégar and Dr. Trenholme triumphantly vindicate the truth of the theory upon which Battey based his operation ; viz., that the removal of the ovaries would bring about the menopause. It has been urged that his theory is not in accord with the fashionable physiological doctrines of the day ; and, therefore, his theory being wrong, his practice cannot be right. His theory may not be technically correct ; but it does not follow that his operation is unjustifiable ; for practical results and theoretical opinions are two very different things. And, moreover, we may differ about what really constitutes a *de facto* change of life. The popular idea of change of life is the cessation of menstruation. If we accept this as the definition of change of life, then the removal of the ovaries will not always bring it about. The extirpation of the ovaries will generally arrest the menstrual

function, but not always. Now and then, the menses recur at regular intervals for months, and even for years, after the removal of the ovaries. This has occurred at least once in the practice of Dr. Battey; and he quotes Atlee, Peaslee, and Storer as giving illustrations of the same thing. Their cases are mostly examples of what Spencer Wells aptly terms metrostaxis. But Atlee gives some cases of *bonâ fide* menstruation after extirpation of both ovaries. In one case, in which Dr. Atlee removed both ovaries at the age of 35, the patient menstruated regularly and normally till the age of 45, when change of life, so-called, occurred in the usual way.

In October 1857, Dr. Atlee extirpated the left ovary for a married lady twenty-seven years old. In November 1864, he extirpated her right ovary. She continued to menstruate regularly; and, in 1870, six years after the last ovary was extirpated, she was "regular as to time, quantity, quality, etc., and free from any abnormal symptoms". In 1846, Dr. Charles Clay of Manchester removed one ovary from a married lady, and Dr. Atlee removed the other in 1861. Two years after this, she writes to Dr. Atlee: "Courses all right every month." So we see that extirpation of the ovaries is not always followed by cessation of the menstrual flow. But is cessation of the menses actual change of life? By no means. In 1859, I knew a poor woman who had had nine children in fourteen years, and, during all this time, she had menstruated but three times. She had three or four labours consecutively without a single menstruation. Thus we see that ovulation went on regularly, although there was no menstruation. Again, we see cases of complete amenorrhœa, where ovulation, as indicated by the menstrual molimen, occurs regularly every month. In Dr. Battey's first case (of Battey's operation), the patient had menstruated but twice in sixteen years, yet she suffered fearfully every month with the menstrual molimen, and, when he extirpated the ovaries, "each ovary presented a recently ruptured Graafian vesicle, in one of which the blood had not yet coagulated, as if the ovum had but just escaped". There are many cases on record where *post mortem* examinations have shown corpora lutea and recently ruptured Graafian vesicles when there was no menstruation, because there was no uterus. Is it correct, then, to say that change of life consists in the disappearance of the menses? Certainly not; for then the woman who ceased to menstruate while she bore half a dozen or more children had change of life, although she was ovulating and bearing children all the time; and the young woman who menstruates two or three times, and then ceases to

menstruate, has change of life, although she may have had for years a most violent menstrual molimen every month, and, when the ovaries are extirpated, they may present numerous corpora lutea and recently ruptured Graafian vesicles, which are the real signs of ovulation, and the real evidence that there has been no change of life. It is absurd, then, to say that change of life consists in the disappearance of menstruation. The real change of life consists in the cessation of ovulation, whether this be accomplished by Nature at the climacteric period, or artificially by the operation of ovariotomy, or Battey's operation, which was projected expressly to arrest ovulation and the accompanying menstrual molimen.

When Battey reasoned out his operation of extirpating the ovaries to effect change of life, he reasoned out a truism, for the removal of the ovaries must necessarily stop ovulation, which constitutes a *de facto* change of life, whether the menses recur afterwards or not. The cessation of menstruation may then be regarded as the sign of change of life, but not the actual change. From this point of view, Battey was right in theory; and experience shows that he is right in practice. His operation of extirpating the ovaries to arrest the menstrual molimen is based upon sound physiological doctrine; and in practice it accomplishes what it proposes to do. For we find that, when both ovaries are neatly and cleanly removed, the menstrual molimen ceases. But, if they be imperfectly removed, the menstrual molimen recurs as regularly as it did before the operation.

The term normal ovariotomy, applied by Battey to his operation, is a misnomer; for, in all cases requiring operation, the ovaries are never found in a normal state. This term has been much and justly criticised; and Battey asked me some time ago to give his operation a name. I would like to see it recognised by the profession as "Battey's operation". I think he is fully entitled to that honour. He was the first to grasp, in its widest range, the influence and effects upon the general system of what he calls an "unrelieved menstrual molimen". He was the first to suggest a method of cure; he was the first to carry out his own suggestion, and to perform an operation for the cure of a disease that had never been cured before. He performed the operation on his own responsibility, with no great authority to sustain him. He demonstrated the correctness of the principles upon which his operation was based, by proving its success in practice. He established a precedent that may now be followed with safety, and opened up a new field of research that promises results as grand as those now achieved

by ovariotomy. He has in many instances raised sorrowing and hopelessly incurable women from a perfect slough of despair, from indescribable suffering, from epileptic convulsions, from threatened insanity, and in some instances from impending and certain death, and restored them to health.

We have precedents enough for naming diseases and operations for those who have been the first to discover and describe the one, or to originate and perform the other. I may mention Bright's disease, Addison's disease, Colles' fracture, the Hunterian operation, Syme's operation, Peragoff's operation, Graeffe's operation, etc. The moment they are named, we recognise each operation, and the manner of executing it in its minutest details.

The difficulty already encountered in finding a name sufficiently distinctive and characteristic of this operation justifies us in calling it Battey's operation. I cherish the hope that the profession in Europe will unite with us in America in giving it the name of the man who originated the operation, and who has, by the most indomitable courage, succeeded in proving its usefulness. He has won the honour, and let him wear it.